## DATASHEET - LN1-4-100-I

Part no. Catalog No.

Switch-disconnector, 4 p, 100A, frame size 1

LN1-4-100-I

111999



Similar to illustration

## **Delivery program**

Product range			Switch-disconnectors
Protective function			Disconnectors/main switches
Standard/Approval			IEC
Installation type			Fixed
Construction size			LN1
Description			Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Busbar tag shroud to VDE 0160 Part 100.
Number of poles			4 pole
Standard equipment			Box terminal
Switch positions			I, +, 0
Rated current = rated uninterrupted current	$I_n = I_u$	А	100
Short-circuit protection max. fuse gL-characteristic		A gL	125

#### Technical data Switch-disconnectors

Switch-disconnectors			
Rated surge voltage invariability	U <sub>imp</sub>		
Main contacts		V	6000
Auxiliary contacts		V	6000
Rated operational voltage	Ue	V AC	690
Rated operating frequency	f	Hz	50/60
Rated current = rated uninterrupted current	$I_n = I_u$	Α	100
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V	690
Use in unearthed supply systems		V	≦ 690
Rated short-circuit making capacity			
690 V 50/60 H	lc	kA	2.8
Rated short-time withstand current			
t = 0.3 s	I <sub>cw</sub>	kA	2
t = 1 s	I <sub>cw</sub>	kA	2
Rated conditional short-circuit current			
With back-up fuse		A gG/gL	PN1(N1)-63125: 125 PN1(N1)-160: 160
400 415 V		kA	100
690 V		kA	80
With downstream fuse		A gG/gL	PN1(N1)-63125: 125 PN1(N1)-160: 160
400 415 V		kA	100
690 V		kA	10
Rated making and breaking capacity			
Rated operational current	le	Α	
415 V	le	Α	160
690 V	le	А	160
415 V	le	А	160
690 V	le	А	160
Lifespan, mechanical	Operations		20000
Max. operating frequency		Ops/h	120



Sint Sign Price     Operations     Vol     Sint Sign Price     Sint Sign Price     Sint Sign Price     Sint Sign Price     Sint Price	Lifespan, electrical			
StandedDevelope StandedSoloSoloStandedSpectoreSpectoreSpectoreSpectoreStanded Coper controlSpectoreSpectoreSpectoreStanded Coper controlSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreStandedSpectoreSpectoreSpectoreSpectoreSpectoreSpectore		Operations		10000
Beak Boy StabilityDeraises StabilitySecond SolutionSecond <b< td=""><td>•</td><td></td><td></td><td></td></b<>	•			
400 V SNUM h:     Operations     750       600 V SNUM h:     Operations     750       600 V SNUM h:     Operations     750       Both brack time at short-circuit     mail     -       Terminal     -     -       Solid Corporation				
StylinkOperationSecondS				
89 50 30 0 L290 a 10 a control o control				
Toto break time at short-citcuitIIIStandard aquing timeIIIIBook terminalIIIIISolidII<				
Terminal capacity         Selection		operations	me	
Standard quippinont     Particle     Particle     Particle     Particle     Particle     Particle     Particle       Botterminal     Particle     Variable     Variable     Variable     Variable       Standard     Particle     Variable     Variable     Variable       Standard     Particle     Variable     Variable       Standar			1113	
Network         Note				Box terminal
Backerminal         Mar         Sub         Mar         Sub         Sub <td< td=""><td></td><td></td><td></td><td></td></td<>				
Image: Stranded       2 × (6 - 16)         Stranded       2 × (6 - 16)         Tunnel terminal       2 × (5 - 70) Up to 55 mm <sup>2</sup> can be connected depending on the cable manufacturer         Stranded       1 × 18         Stranded       1 × 18         Stranded       1 × 18         Boitterminal and rear-side connection       1 × 18         Direct on the switch       1 × 18         Stranded       1 × 18         Aconductors, Cu cable       1 × 18         Tunnel terminal       1 × 18         Stranded       1 × 18 <td></td> <td></td> <td></td> <td></td>				
Tunnet terminal       2×25         Tunnet terminal       2×25         Tunnet terminal       Image: Stranded         Stranded       Image: Stranded         Bott terminal and rear-side connection       Image: Stranded         Direct on the switch       Image: Stranded         Stranded       Image: Stranded     <	Solid		mm <sup>2</sup>	
Solid       Image: Signade	Stranded		mm <sup>2</sup>	1 x (25 - 70) Up to 95 $\text{mm}^2$ can be connected depending on the cable manufacturer. 2 x 25
Stranded       Image:	Tunnel terminal			
Stranded       k25 - 50         Bolt terminal and rear-side connection       K25 - 50         Direct on the switch       K25 - 50         Solid       K26 - 50         Stranded       k25 - 50         Al conductors, Cu cable       K25 - 50         Tunnel terminal       K25 - 50         Solid       K25 - 50         Solid       K25 - 50         Stranded       K25 - 50         Stranded       K25 - 70         Bot terminal       K26 - 80         Stranded       K26 - 80         Stranded       K26 - 80         Stranded       K20 - 80         Stranded       K20 - 80         Stranded       K20 - 80         Stranded       K20 - 80         Stranded	Solid		mm <sup>2</sup>	1 x 16
Botterminal and rear-side connection     Image: Botterminal and rear-side connection       Botterminal and rear-side connection     Image: Botterminal and rear-side connection       Stranded     Image: Botterminal and rear-side connection <td< td=""><td>Stranded</td><td></td><td></td><td></td></td<>	Stranded			
Interd on the switch       Image: Standed       Image: Standed <td< td=""><td>Stranded</td><td></td><td>mm<sup>2</sup></td><td>1 x (25 - 95)</td></td<>	Stranded		mm <sup>2</sup>	1 x (25 - 95)
Solid       ma <sup>2</sup> k1(10-16) 2x (6-16)         Stranded       ma <sup>2</sup> k2 (25-70)         A conductors, Cu cable       ma <sup>2</sup> k2 (25-70)         Tunnel terminal       ma <sup>2</sup> k16         Solid       ma <sup>2</sup> k16         Stranded       ma <sup>2</sup> k125-95)         Cu strip (number of segments x width x segment thickness)       ma <sup>2</sup> k125-95)         Box terminal       ma <sup>2</sup> k125-95)         Cu strip (number of segments x width x segment thickness)       ma <sup>2</sup> k125-95)         Box terminal       ma <sup>2</sup> x125-95)         Custip (number of segments x width x segment thickness)       ma <sup>2</sup> x125-95)         Box terminal       max       ma       x125-95)         Custip (number of segments x width x segment thickness)       ma       x125-95)         So terminal       max       ma       x125-95)         Cupper busbar (width x thickness)       max       ma       x125-95)         Bot terminal and rear-side connection       max       ma       x125-95)         Direct on the switch       max       max       max       max         Direct on the switch       max       max       max       max         Dir	Bolt terminal and rear-side connection			
Image: Stranded     2x (6 - 16)       Stranded     ma <sup>2</sup> 1x (25 - 70)       A conductors, Cu cable     ma <sup>2</sup> 1x (25 - 70)       Tunnet reminal     ma <sup>2</sup> 1x (25 - 70)       Stranded     ma <sup>2</sup> 1x 16       Stranded     ma <sup>2</sup> 1x 16       Stranded     ma <sup>2</sup> 1x (25 - 95)       Cu strip (number of segments xwidth x segment thickness)     ma <sup>2</sup> 1x (25 - 95)       Box terminal     max     7x 9x 9x 8.       Cu strip (number of segments xwidth x segment thickness)     max     9x 9x 9x 8.       Box terminal     max     9x 9x 9x 8.       Copper busbar (width x thickness)     max     9x 9x 9x 8.       Strew connection     max     max     9x 9x 9x 8.       Direct on the switch     max     max     1x 5       Direct on the switch     max     max     1x 5       Cutrol cables     max     max     1x 5	Direct on the switch			
Al conductors, Cu cable  Tunnel terminal  Solid  Stranded  Cu strip (number of segments x width x segment thickness) Box terminal  Cu strip (number of segments x width x segment thickness) Box terminal  min. mm  X 2 x 25  Tu 16  Tu 1	Solid		mm <sup>2</sup>	
Tunel terminal     Image: Solid     Image: Solid <td< td=""><td>Stranded</td><td></td><td>mm<sup>2</sup></td><td></td></td<>	Stranded		mm <sup>2</sup>	
Solid     rm2     1x 16       Stranded     rm2     1x (25 - 95)       Cu strip (number of segments x width x segment thickness)     rm2     1x (25 - 95)       Box terminal     rm2     1x (25 - 95)       Cu strip (number of segments x width x segment thickness)     rm3     xm3       Box terminal     rm3     xm3     2x 9x 0.8       Copper busbar (width x thickness)     max     max     9x 9x 0.8       Screw connection     max     rm3     2x 9x 0.8       Boit terminal and rear-side connection     max     rm3     react       Direct on the switch     rm4     rm3     react       International     rm4     rm4     react       Control cables     max     rm4     react       max     max     rm4     react       max     max     fm4     react	Al conductors, Cu cable			
Stranded       Image: Stranded         Box terminal       Image: Stranded         Image: Stranded       Image: Stranded         Stranded       Image: Stranded         Image: Stranded       Image: Stranded         Image: Stranded       Image: Stranded         Image: Stranded       Image: Stranded         Image: Stranded       Image: Stranded         Image: Stranded       Image: Stranded	Tunnel terminal			
Stranded       سm2       ۱× (25 - 95)         Cu strip (number of segments x width x segment thickness)       س       س         Box terminal       min.       mm2       2× 9× 0.8         Copper busbar (width x thickness)       max.       mm2       9× 9× 0.8         Bolt terminal and rear-side connection       mm4       Mm2       Screw connection         Screw connection       mm4       Mm4       Mm4         Direct on the switch       min.       mm4       Mm4         Max       mm4       Mm4       Mm4         Control cables       mm4       Mm4       Mm4         Max       mm4       Mm4       Mm4         Max       mm4       Mm4       Mm4         Kontrol cables       mm4       Mm4       Mm4         Max       Mm4	Solid		mm <sup>2</sup>	1 x 16
Custrip (number of segments x width x segment thickness)     For an	Stranded			
Cu strip (number of segments x width x segment thickness)     Max     Mm     2x 9x 0.8       Box terminal     max.     mm     9x 9x 0.8       Copper busbar (width x thickness)     mm	Stranded		mm <sup>2</sup>	1 x (25 - 95)
Box terminal     Image: Second S	Cu strip (number of seaments x width x seament thickness)			
min.     mm     2x 9x 0.8       max.     mm     9x 9x 0.8       Copper busbar (width x thickness)     mm     9x 9x 0.8       Bolt terminal and rear-side connection     mm     F       Screw connection     F     F       Direct on the switch     min.     M6       Image: Screw connection     min.     mm       Screw connection     min.     mm     12x 5       Control cables     max.     mm     16x 5       Image: Screw connection     max.     mm     16x 5				
Image: Max     Mm     Page 9x9x0.8       Copper busbar (width x thickness)     mm     F       Bolt terminal and rear-side connection     mm     F       Screw connection     F     F       Direct on the switch     F     M6       Image: Minited Screw connection     min.     mm       Minited Screw connection     min.     Mm       Control cables     max     mm       Max     mm     15x5       Max     mm     15x5		min.	mm	2 x 9 x 0.8
Copper busbar (width x thickness)     mm     imm       Bolt terminal and rear-side connection     imm     imm       Screw connection     imm     imm       Direct on the switch     imm     imm       Imm     imm     imm       Min.     mm     imm       Imm     imm     imm       Control cables     imm     imm       Imm     imm     imm       Imm     imm     imm				
Bolt terminal and rear-side connection     Image: Marcine Strew Connection     Image: Marcine Strew Connection       Screw connection     Image: Marcine Strew Connection     Marcine Strew Connection       Direct on the switch     Image: Marcine Strew Connection     Marcine Strew Connection       Image: Marcine Strew Connection     Image: Marcine Strew Connection     Marcine Strew Connection       Control cables     Image: Marcine Strew Connection     Image: Marcine Strew Connection       Image: Marcine Strew Connection     Image: Marcine Strew Connection     Image: Marcine Strew Connection	Copper busbar (width x thickness)			
Direct on the switch     Image: Marcine Schwarz,				
Direct on the switch     Image: Marcine Schwarz,	Screw connection			M6
min.     mm     12 x 5       max.     mm     16 x 5       Control cables     mm <sup>2</sup> 1 x (0.75 - 2.5)				
Max.     mm     16 x 5       Control cables     mm <sup>2</sup> 1 x (0.75 - 2.5)		min.	mm	12 x 5
Control cables mm <sup>2</sup> 1 x (0.75 - 2.5)				
mm <sup>2</sup> 1 × (0.75 - 2.5)	Control cables			
2 X (U. /5 - 1.5)			mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	100
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	11.4
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.

10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9 Insulation properties	
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

### **Technical data ETIM 7.0**

Low-voltage industrial components (EG000017) / Switch disconnector (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])

[AKF060013])		
Version as main switch		Yes
Version as maintenance-/service switch		Yes
Version as safety switch		No
Version as emergency stop installation		Yes
Version as reversing switch		No
Number of switches		
Max. rated operation voltage Ue AC	V	400
Rated operating voltage	V	690 - 690
Rated permanent current lu	А	100
Rated permanent current at AC-23, 400 V	А	
Rated permanent current at AC-21, 400 V	А	0
Rated operation power at AC-3, 400 V	kW	0
Rated short-time withstand current Icw	kA	2
Rated operation power at AC-23, 400 V	kW	55
Switching power at 400 V	kW	0
Conditioned rated short-circuit current Iq	kA	100
Number of poles		4
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as change-over contact		0
Motor drive optional		Yes
Motor drive integrated		No
Voltage release optional		Yes
Device construction		Built-in device fixed built-in technique
Suitable for ground mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for front mounting centre		No
Suitable for distribution board installation		Yes
Suitable for intermediate mounting		Yes
Colour control element		Grey
Type of control element		Rocker lever

Interlockable

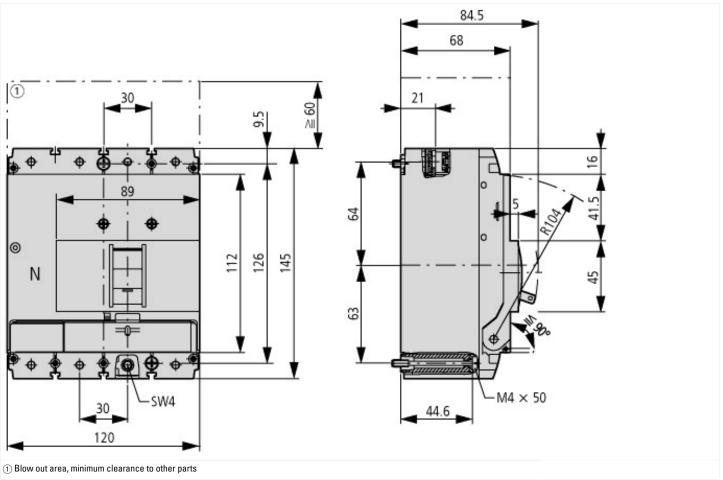
Type of electrical connection of main circuit

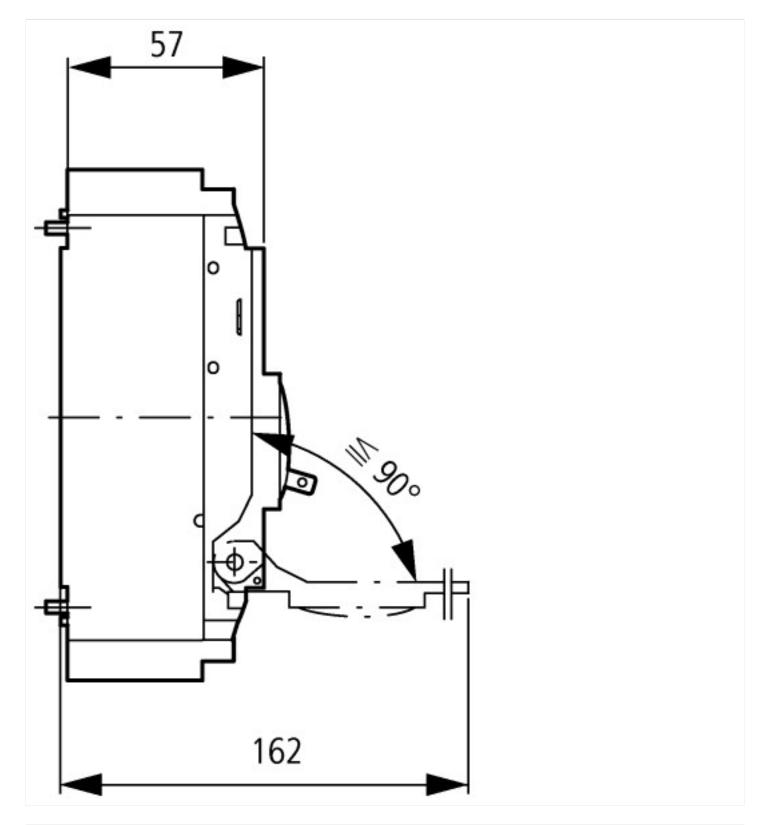
Degree of protection (IP), front side

Degree of protection (NEMA)

Yes	
Frame clamp	
IP20	

### **Dimensions**





## Additional product information (links)

IL01203007Z circuit-breaker LZM.1(-4), switch-disconnector LN1

IL01203007Z circuit-breaker LZM.1(-4), switchdisconnector LN1 ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL01203007Z2017\_05.pdf